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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,630	01/25/2001	Hideo Miyake	1614.1116	5739

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EXAMINER

LI, AIMEE J

ART UNIT PAPER NUMBER

2183

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/768,630

Applicant(s)

MIYAKE ET AL.

Examiner

Aimee J Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 23 December 2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-5 have been considered. Claims 6-17 have been cancelled as per Applicant's request.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being taught by Gottlieb, U.S. Patent Number 6,298,431 (herein referred to as Gottlieb).
6. Referring to claim 1, Gottlieb has taught a computer which performs parallel processing of a plurality of programs in a time-division fashion, comprising:
 - a. Hardware resources divided into a plurality of areas (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);

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- b. An evacuation unit which records identification information identifying a first program, and evacuates information stored in an area of said plurality of areas if the area is necessary for execution of a second program and is being used for execution of the first program (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2). In regards to Gottlieb, the identification information is inherent to the banked shadow registers, since some sort of identification is necessary for the system to correctly identify which thread information must be loaded on a thread switch.
- c. A restoration unit which restores the evacuated information to the area based on the identification information when the second program comes to a halt or to an end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

7. Referring to claim 2, Gottlieb has taught an interruption unit which brings about interruption processing if the area is necessary for execution of a second program and is being used for execution of the first program, wherein said evacuation unit operates as part of the interruption processing to record the identification information and to evacuate the information stored in the area (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

8. Referring to claim 3, Gottlieb has taught a computer which performs parallel processing of a plurality of programs in a time-division fashion, comprising:

- a. Hardware resources divided into a plurality of areas (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);
- b. An evacuation unit which records identification information identifying a first program, and evacuates information stored in an area of said plurality of areas if the area is necessary for execution of a second program and is being used for execution of the first program and a second area of said plurality of areas are necessary for execution of a second program and are being used for execution of the first program, said evacuation unit subsequently evacuating information stored in the second area when use of the second area becomes actually necessary for execution of the second program (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2). In regards to Gottlieb, the identification information is inherent to the banked shadow registers, since some sort of identification is necessary for the system to correctly identify which thread information must be loaded on a thread switch.
- c. A restoration unit which restores the evacuated information to the area based on the identification information when the second program comes to a halt or to an end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-

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60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

9. Referring to claim 4, Gottlieb has taught a method of controlling a computer which performs parallel processing of a plurality of programs in a time-division fashion, comprising the steps of:

- a. Providing hardware resources divided into a plurality of areas (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);
- b. Recording identification information identifying a first program, and evacuating information stored in an area of said plurality of areas if the area is necessary for execution of a second program and is being used for execution the first program (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2). In regards to Gottlieb, the identification information is inherent to the banked shadow registers, since some sort of identification is necessary for the system to correctly identify which thread information must be loaded on a thread switch.
- c. Restoring the evacuated information to the area based on the identification information when the second programs comes to a halt or to an end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

10. Referring to claim 5, Gottlieb has taught a method of controlling a computer which performs parallel processing of a plurality of programs in a time-division fashion, comprising the steps of:

- a. Providing hardware resources divided into a plurality of areas (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2);
- b. Recording identification information identifying a first program, and evacuating information stored in an area of said plurality of areas if the area is necessary for execution of a second program and is being used for execution the first program and are being used for execution of the first program, followed by subsequently evacuating information stored in the second area when use of the second area becomes actually necessary for execution of the second program (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).
In regards to Gottlieb, the identification information is inherent to the banked shadow registers, since some sort of identification is necessary for the system to correctly identify which thread information must be loaded on a thread switch.
- c. Restoring the evacuated information to the area based on the identification information when the second programs comes to a halt or to an end (Gottlieb column 2, lines 47-62; column 3, lines 39-46; column 4, lines 19-60; column 5, line 24 to column 6, line 9; column 7, line 52 to column 8, line 11; Figure 1; and Figure 2).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as follows. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR § 1.111(c).

- a. Sharangpani et al., U.S. Patent Number 6,272,520, has taught a multi-threaded system with shadow registers to back up the current thread's architected state.
- b. Nation et al., U.S. Patent Number 6,233,599, has taught a multi-threaded system with buffers to save the current thread's architected state.

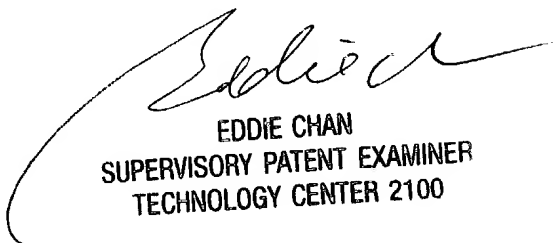
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aimee J Li whose telephone number is (703) 305-7596 or (571) 272-4169 after 12 October 2004. The examiner can normally be reached on M-T 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (703) 305-9712 or (571) 272-9712 after 12 October 2004. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 .

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJL
Aimee J. Li
September 20, 2004



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